

REMARKS

The present response amends claims 41, 59, and 79. Claims 41-84 remain pending in the captioned case. Further examination and reconsideration of the presently claimed application are respectfully requested.

Section 103 Rejections

Claims 41-84 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,995,534 to Fullerton et al. (hereinafter “Fullerton”) in view of U.S. Patent No. 4,831,463 to Faroudja (hereinafter “Faroudja”). To establish a case of *prima facie* obviousness of a claimed invention, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. Second, there must be a reasonable expectation of success. As stated in MPEP 2143.01, the fact that references can be hypothetically combined or modified is not sufficient to establish a *prima facie* case of obviousness. *See In re Mills*, 916 F.2d. 680 (Fed. Cir. 1990). Finally, the prior art references must teach or suggest all the claim limitations. *In re Royka*, 490 F.2d. 981 (CCPA 1974); MPEP 2143.03, emphasis added. Specifically, “all words in a claim must be considered when judging the patentability of that claim against the prior art.” *In re Wilson* 424 F.2d., 1382 (CCPA 1970). Using these standards, Applicants contend that the cited art fails to teach or suggest all features of the currently pending claims, some distinctive features of which are set forth in more detail below.

The cited art teaches away from a modulator unit that produces a spectral power density being reduced without a bandwidth of the output signal being substantially changed. Present independent claims 41, 59, and 79 each describe a modulator unit that modulates a signal so that the spectral lines of the output signal have gaps filled therein between individual spectral lines resulting in a spectral power density that is reduced. Specifically, the spectral power density is reduced without a bandwidth of the output signal being substantially changed. Description of this concept is set forth in the present specification, e.g., page 7 under the heading “Phase-Shift Technique.” Moreover, the claimed concept of not substantially changing the bandwidth of the

output signal is illustrated, for example, in Figs. 8 and 16, and Figs. 5 and 7 of the present specification. As shown by comparing Figs. 5 and 7, the spectral lines of Fig. 5 are modulated so that the gaps between the spectral lines are filled (shown in Fig. 7). Moreover, the power density of each spectral line is reduced. However, the overall bandwidth beginning at 9 Hz and extending upwards to 1 GHz does not change. Thus, the overall bandwidth remains unaffected even though the spectral lines within that bandwidth are filled and the power density is reduced. The various spectral lines shown in each of these figures are modulated so that the gaps between the spectral lines (or around a spectral line) are filled in with the modulated signal. However, the overall spacing between the spectral lines commensurate with the bandwidth from one spectral line to the next, does not substantially change when the gaps between spectral lines are filled.

Contrary to the present independent claims 41, 59, and 79, Faroudja specifically requires that when modulating a transmitted signal, the higher frequency spectral components are folded into the lower-band and mid-band spectral gaps (Faroudja -- col. 4, lines 39-44). Consequently, the modulated signal that folds the higher frequency components into the lower frequency components comprises a process which “compress[es] spectrum video through the storage or transmission path” (Faroudja -- col. 4, lines 45-46). By folding the higher frequency components into the lower frequency components in Faroudja, an output signal is being produced that has a changed bandwidth -- directly contradictory to present claims 41, 59, and 79 of which the bandwidth does not change.

The shortcomings of Faroudja are compounded by Fullerton. Nowhere is Fullerton is there any mention of what would occur to the bandwidth of the output signal as a result of modulation. A skilled artisan when reviewing the combination of Fullerton and Faroudja would be motivated by the teachings of Faroudja to decrease the bandwidth of the output signal in Fullerton due to the benefits offered by Faroudja. Thus, when combining references, the Examiner must contend with suggestions made in each reference as to what would that reference teach a skilled artisan when reviewing the other reference. One skilled in the art would reduce the bandwidth given the combination of Faroudja and Fullerton. This is directly contradictory to present independent claims 41, 59, and 79.

The cited art does not disclose a modulator unit for modulating an output signal, a carrier signal, or output signal at any site in the transmission circuit, independently of a modulation technique selected for the purpose of signal transmission. Present claims 41, 59, and 79 each recite two different modulation techniques. A first modulation technique is that used to fill gaps between individual spectral lines, whereas a second modulation technique that is independent of the first modulation technique is used for the purpose of signal transmission. Using two separate modulation techniques that are independent from one another allows the gap filling technique to not affect or be affected by any other form of modulation used to transmit a signal.

Contrary to independent claims 41, 59, and 79, Faroudja makes no mention whatsoever of two different modulation techniques, one independent from the other. In fact, the only modulation described in Faroudja is the folding technique. For the sake of simplicity, Faroudja specifically states that the folding technique provides a simplistic modulation mechanism for filling gaps as well as transmitting a signal across the transmission medium (Faroudja -- col. 4, lines 26-35). When reading Faroudja, a skilled artisan would recognize that in order to simplify the transmission mechanism, folding higher frequency components into the lower frequency components not only reduces the overall bandwidth of the modulated signal, but allows for ease of recovery and simplistic transmission design at both the transmitter and receiver ends of the transmission system (Faroudja -- col. 5, lines 26-30). Thus, a skilled artisan would have no incentive for making modifications to Faroudja to achieve a more complex, independent, and dual modulation technique as presently claimed.

The shortcomings of Faroudja are compounded in Fullerton. Nowhere in Fullerton is there any mention of modulating a signal at any site in the transmission circuit, independently of a modulation technique selected for the purpose of signal transmission as recited in the present independent claims. Fullerton only describes a sub-carrier that is a carrier modulated with “information separate from carrier modulation, which in turn modulates a carrier” (Fullerton -- col. 4, lines 1-3). Dual modulation of a carrier does not connote that which is claimed -- modulation at any site in the transmission circuit, independent of a modulation technique selected for the purpose of signal transmission. *See*, present independent claims 41, 59, and 79. Nowhere in any passage

within Fullerton is there any mention of modulation at any site in the transmission circuit as alleged on page 4 of the Office Action.

The cited art does not teach or suggest a first stationary part and a second movable part, with a transmission circuit coupled to transmit an output signal between the first stationary part and the second movable part. Present independent claim 79 recites a transmission circuit coupled to transmit an output signal between a first stationary part and a second movable part. Contrary to claim 79, neither Faroudja nor Fullerton make any mention of a stationary part and a movable part, much less a transmission circuit which transmits a signal between the first stationary part and the second movable part. It appears the Examiner is now taking the position that Fullerton describes a first stationary part (transmitter base) in col. 2, lines 48-52 and col. 13, lines 20-29, and the second movable part (mobile receiver) in col. 16, lines 47-65 (Office Action -- page 6). Applicants respectfully disagree. Nowhere in any of the recited passages set forth in the Office Action is there any mention that the transmitter is stationary and the receiver is movable. The passages simply do not describe the capability of movement, the desirability of movement, or whether a skilled artisan when reading Fullerton would glean that a transmitter and receiver should be movable relative to each other. Therefore, Applicants do not agree with the characterizations made in the Office Action.

Faroudja and Fullerton do not teach or suggest a modulator unit that controls a clock generator for broadening of spectral lines. Present dependent claims 45-48 and 63-66 make clear that the particular modulation technique involves a modulator unit that controls a clock generator. The clock generator thereby produces frequency modulation to the clock cycle. This can be achieved by use of a VCO as a frequency-determining element, and the frequency modulation is applied to the VCO. Nowhere is there any mention in either Faroudja or Fullerton of modulating a clock cycle using frequency modulation or any other technique via a VCO as set forth in present claims 45-48 and 63-66. Absent any teaching of this claim limitation through use of clock modulation or otherwise, the cited art fails to render obvious claims 45-48 and 63-66.

For at least the reasons stated above, Applicant asserts that claims 41, 59, and 79, as well as claims dependent therefrom, are patentably distinct over the cited references. Accordingly, Applicant respectfully requests removal of this rejection.

CONCLUSION

The present amendment and response is believed to be a complete response to the issues raised in the Office Action mailed April 19, 2006. In view of the remarks herein traversing the rejections, Applicants assert that pending claims 41-84 are in condition for allowance. If the Examiner has any questions, comments, or suggestions, the undersigned attorney earnestly requests a telephone conference.

The Commissioner is authorized to charge the required fees or credit any overpayment to Daffer McDaniel, LLP Deposit Account No. 50-3268/5858-05400.

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